

city; and he bought a parcel of a field, where he had spread his tent at the hand of the children of Hamor, Shechem's father, for an hundred pieces of money; and he erected there an altar, and called it El-beth-el." (Verses 18, 19, 20.) Here, as we learn from Joshua xiv. 32, were buried "the bones of Joseph, which the children of Israel brought up out of Egypt," in accordance with his injunction. (Gen. l. 25.) And it was in this spot that our Saviour conversed with the woman of Samaria. "Then cometh he to a city of Samaria, which is called Sychar, near to the parcel of ground that Jacob gave to his son Joseph. Now Jacob's well was there." (St. John's Gospel, iv. 5, 6.)

When the rupture took place between the Shechemites and his family, Jacob received the divine command (Gen. xxxvi.) to return to Beth-el, and dwell there, and to make there an altar, which he accordingly did, "and called the place El-beth-el." (Verse 7.) On the occasion when the Almighty renewed his promise to Jacob, and changed his name to the more glorious one of Israel, the patriarch "set up a pillar in the place where he talked with him, even a pillar of stone, and he poured oil thereon." (Verse 14.) This appears to be a different pillar from the one emphatically called Beth-el, though, like that, erected to serve as a memorial. The next act recorded of Jacob is his setting up a tribute of affection over the grave of his favourite wife Rachel, who was buried at Beth-lehem: "and Jacob set a pillar upon her grave; that is the pillar of Rachel's grave unto this day." (Verse 20.) To this monument we shall have occasion to allude hereafter. Jacob now journeyed on until he came to Hebron or Mamre, evidently the chief family residence, where Isaac then abode, and here Jacob's wanderings terminated for the present, and he remained to soothe the descent of his aged parent to the tomb, in which he was laid by the united care of Esau and Jacob.

Our subject receives little further illustration from Holy Writ, from the time that the Israelites went down into Egypt until their Exodus; mention is made that they were employed by their taskmasters in making bricks; "and they made their lives bitter with hard bondage, in mortar and in brick." (Exodus i. 14.) Josephus says that the Egyptians enjoined them to build walls for their cities and ramparts; "they set them also to build the Pyramids." (Antiq. b. l. c. 9.) Moses says, "and they built for Pharaoh treasure cities, Pithom and Raameses." (Verse 11.)

G. R. F.

DESCRIPTION OF THE ROOFS OVER BUCKINGHAM PALACE, COVERED WITH LORD STANHOPE'S COMPOSITION.

By PETER HOGG, Assoc. Inst. C.E.

The mixture invented by Lord Stanhope, and used by the late Mr. Nash, for covering the nearly flat fire-proof roofs of Buckingham Palace, is described in the paper as being composed of Stockholm tar, dried chalk in powder, and sifted sand, in the proportions of three gallons of tar to two bushels of chalk and one bushel of sand, the whole being well boiled and mixed together in an iron pot. It is laid on in a fluid state, in two separate coats, each about three-eighths of an inch in thickness, squared slates being imbedded in the upper coat, allowing the mixture to flush up between the joints the whole thickness of the two coats, and the slates being about an inch. The object in imbedding the slates in the composition is to prevent its becoming softened by the heat of the sun, and sliding down to the lower part of the roof, an inclination being given of only one inch and a half in ten feet, which is sufficient to carry off the water, when the work is carefully executed. One gutter, or water-course, is made as near to the centre as possible, in order to prevent any tendency to shrink from the walls, and also that the repairs, when required, may be more readily effected. It is stated, that after a fall of snow it is not necessary to throw it from the roof, but merely to open a channel along the water-course, and that no overflowing has ever occurred; whereas with metal roofs it is necessary to throw off the whole of the snow on the first indication of a thaw. These roofs have been found to prevent the spreading of fire, and it is stated that on one occasion, to test their unflammability, Mr. Nash had a bonfire of tar-barrels lighted on the roof of Cowes Castle. Another advantage is stated to be, the facility of repair which the composition offers, as if a leak occurs it can be sealed and rendered perfectly watertight by passing a hot-iron over it; and when taken up, the mixture can be remelted and

used again. The author proposes to obviate the disadvantage of the present weight of these roofs by building single brick walls at given distances, to carry slates, upon which the composition should be laid, instead of filling the spandrels of the arches with solid materials as has been hitherto the custom. The reported failures of this species of covering at Mr. Nash's house in Regent-street, and in other places, are accounted for by the composition having been used in one thin coat, laid upon an improper foundation of laths and tiles. The durability of the roofs which were carefully constructed with good materials, has been, it is contended, fully proved at Lord Palmerston's house, which was covered with the composition in 1807; Lord Berwick's, in 1810; Sir James Langham's, in 1812; the Pavilion, at Brighton, in 1816 and 1823; and nearly the whole of Buckingham Palace, in 1826 and 1829; the latter roofs are stated to be in perfect order at the present time, and have scarcely demanded any repairs since their completion. The paper is illustrated by a drawing showing the mode of constructing the roofs, and the improved method proposed by the author, with specimens of the composition, with slates imbedded, taken from the roof of the Palace during some recent alterations.

Mr. Poynter presented a drawing of the mode of setting the pots for melting and preparing the composition, the proportions of which he stated somewhat differently from those given in the paper. Three measures of ground chalk, dried and sifted very fine, were mixed and kneaded up with one measure of tar; these ingredients were melted in an iron pot, set in such a manner that the flame should not impinge too violently upon it. The first, or "skimming" coat of the covering, being laid on of a thickness of 3-16ths of an inch, the finishing coat was composed by adding to the former mixture three measures of hot sifted sand, well mixing the whole together; the composition was laid on with a tool similar to a plasterer's trowel, but much stronger. Mr. Nash, when he first tried the composition, found that the surface became disintegrated by exposure to the weather; he, therefore, added the slates imbedded in the second coat, and subsequently never used the mixture without them.

In reply to questions from the President and other members, Mr. Nixon stated, that he was employed under Mr. Nash when the Palace roofs were executed, and he could bear testimony to their durability and soundness. The roofs at East Cowes Castle, which were covered with the composition in the year 1806, and those of the Pavilion, at Brighton, in 1816, were now in as good a state as when they were finished. The failure at Mr. Nash's house, in Regent-street, arose from the roof having been originally composed of mastic, which soon cracked. One coat of the Stanhope composition was spread over it to stop the leaks, but it was insufficiently done, and ultimately Mr. Rainy had a new roof, properly constructed, with two coats of composition, which had remained sound to the present time. The price of these roofs, when well constructed by the person who did those of the Palace, was about five guineas per square.

Mr. Hogg observed, that the chalk was only exposed to such a heat as would evaporate any moisture it contained. The weight of the two coats of Stanhope composition, including the slate imbedded in it, was about twelve pounds per superficial foot.

Mr. Sibley considered the Seyssel asphalt, when carefully laid, preferable to any composition of a similar nature; he had used it extensively, and was well satisfied with it both for roofing and paving.

Mr. Hogg objected to the use of asphalt for roofing, as it was liable to injury, being of a brittle nature; it was not elastic, and it shrunk from the walls, thereby causing leaks. Lord Stanhope's composition did not possess these faults, and he did not consider that it was superseded by asphalt.

Mr. Moreland had covered the roof of the treadmill at the Giltspur-street Compter with asphalt and had found it answer perfectly. It was laid on in a thickness of three-eighths of an inch thick, upon roofing boards three-quarters of an inch thick, with canvass nailed on them; with an entire fall of only nine inches, there was not any appearance of leakage.

Mr. Davison had caused a school-room to be floored with asphalt four years ago, and up to the present time there was no symptom of wearing down, although the stones, which were let into the floor for supporting the desks, &c., were considerably abraded. He believed that the only failures of the asphalt had occurred from the use of inferior ingredients. Gas tar had been used instead of vegetable tar, and in those cases the result had not been successful.

A FEW NOTES UPON A MUCH WORN SUBJECT.

WHILE so many are ready to condemn, few are found to come forward and advocate the cause of Gothic architecture. Though it is openly practiced as an art generally by the profession, yet it has not the sanction of the Professor of the Academy.

Most of the reasons urged against it are as foolish as they are erroneous; they say, that Gothic architecture (as they persist in calling it) is not founded upon reason—that it is not governed by principles, that it is devoid of beauty. They say, look at your columns; how uncertain their proportions; varying from five to a hundred and fifty diameters in height—what reason is there in this? You will not find this uncertainty in the Greek or Roman orders; they were designed with reason—the form of a man was the model upon which they founded the proportions of their orders. The Gothic architects were devoid of reason; they formed in stone what they saw in wood, viz. they took their ideas from the vegetable world. Their cathedrals give the idea of an avenue of trees, of budding foliage.

Now, supposing this hypothesis to be correct (but which I do not allow, however much I may be in opposition to many eminent writers on this style), is there not more reason in seeing an avenue of trees solidified—for they own the individual parts are taken from the vegetable world—than the idea of a Greek Temple, the columns being founded on the proportions of a man? If such be the case, why not carry out the idea and make their *temple* resemble bear some relation to their parts?

With all due submission to the learning and abilities of the Rev. J. Dallaway, I must beg leave to differ with the following passage taken from the "Discourses." "If in architecture, taste consist in a just relation of parts in forming a whole, which accords with the idea we give to the orders, and the choice and distribution of ornament be limited from the rich or simple beauties of nature, it is certain the Gothic architects, of whatever country they may have been, have shown much ingenuity and skill, but no taste. For we may observe in the Gothic how totally the rules of classical architecture are violated or forgotten, notwithstanding there is a character of originality which, in its general and complete effect, surprises till we become enchanted with its influence."

In considering the first part of the doctor's passage, we shall find that having but one idea of beauty, and that derived from the classic orders, he consigns all those architects who presume to depart therefrom, to everlasting perdition, viz. excommunication from the regions of taste. In the second place, it is evident that the doctor has judged of the beauty of the ecclesiastical English by the "rules of classical architecture," forgetting that this style has rules and principles of its own, and being governed by those rules and principles, its beauty is not to be judged by the rules of another style; for classical architecture is proportioned, or rather takes its proportions, from its columns; not so the ecclesiastical English—the column is merely a part of the whole, not a main feature as in the classic.

In the last part of this passage the doctor says, that notwithstanding its violation of the classical rules, yet it possessed a character of originality which, in its general and complete effect, surprised and enchanted by its influence. Now, if any thing can have the power, by its influence, to surprise and enchant, it must be acknowledged to possess beauty in a very great degree, however far that style of beauty may be from another; for we may observe, for instance, that a jewel may be very beautiful, and yet another may be just as beautiful, although not possessing the same form as the other. Carter, in his "Lecture on Taste," says, "Whatever may be the fact with regard to these particulars, it seems certain that the Gothic architecture is a proper object of genuine taste, since that which is almost universally allowed to be attractive and interesting cannot be destitute of beauty."

J. L. C.

The new bank now building in Throgmorton-street, behind the Bank of England, promises to be a very appropriate and elegant structure: it is from the design of Mr. Hargreaves, and being erected by Mr. Jay.